

## CLAIMS

What is claimed is:

1. A method for managing topology changes in media applications, comprising:

receiving a partial media topology that includes a plurality of nodes including at least a first media source node and at least a first media sink node;

retrieving a cached media topology that includes a plurality of nodes including at least a second media source node, at least a second media sink node, and at least one transform node; and

copying one or more nodes from the cached media topology to the partial media topology.

2. The method of claim 1, wherein the partial media topology is received from a remote process as a parameter in an interface call.
3. The method of claim 1, wherein the cached media topology is retrieved as a parameter in an interface call.

4. The method of claim 1, further comprising determining whether there are corresponding nodes in the partial topology and the cached topology.
5. The method of claim 4, further comprising transferring the at least one transform node from the cached topology to the partial topology.
6. The method of claim 1, further comprising cloning a plurality of connected nodes from the cached topology into the partial topology.
7. The method of claim 1, further comprising maintaining a data table that correlates one or more decoders in the cached topology with one or more source nodes in the cached topology.
8. The method of claim 1, further comprising connecting one or more nodes in the partial topology.
9. The method of claim 8 wherein connecting the one or more intermediate nodes between the media source node and the media sink node comprises generating a data path between the output of a node an input of an intermediate node.

10. A system comprising:

one or more computer-readable media;

a media engine embodied on the one or more computer-readable media and configured to communicatively interact with an application to present a media presentation;

the media engine being configured to use:

a media session to generate a partial topology, the partial topology including one or more media sources individual ones of which serving as a source of media content, and one or more media sinks configured to sink a media stream, and

a topology loader to resolve the partial topology into a full topology, wherein the topology loader is configured to copy one or more nodes from a cached media topology to the a resolved full media topology.

11. The system of claim 10, wherein the media session passes the partial topology to the topology loader as a parameter in an interface call.

12. The system of claim 10, wherein the media session passes the cached topology to the topology loader as a parameter in an interface call.

13. The system of claim 10, wherein the topology loader is configured to determine whether there are corresponding nodes in the partial topology and the cached topology.
14. The system of claim 10, wherein the topology loader is configured to clone one or more intermediate nodes from the cached media topology, and to connect the one or more intermediate nodes in a communication path between a media source and a media sink in a partial topology.
15. The system of claim 14, wherein the one or more intermediate nodes comprise a decoder for decoding the output of a source node.
16. The system of claim 14, wherein the one or more intermediate nodes comprises an encoder for encoding an input of a source node.
17. The system of claim 10, wherein the topology loader is configured to maintain a data table that associates one or more decoder nodes with a source node from one or more previous topologies.
18. The system of claim 10, wherein the topology loader maintains a data table that stores one or more encoder nodes from one or more previous topologies.

19. The system of claim 10, wherein the topology loader returns a fully resolved topology to the media session.

20. One or more computer-readable media comprising computer executable instructions that, when executed on a computer, direct the computer to:

receive a partial media topology that includes a plurality of nodes including at least a first media source node and at least a first media sink node;

retrieve a cached media topology that includes a plurality of nodes including at least a second media source node, at least a second media sink node, and at least one transform node; and

copy one or more nodes from the cached media topology to the full resolved media topology.

21. The one or more computer readable media of claim 20, wherein the partial media topology is received from a remote process as a parameter in an interface call.

22. The one or more computer readable media of claim 20, wherein the cached media topology is retrieved as a parameter in an interface call.

23. The one or more computer readable media of claim 20, further comprising computer executable instructions that, when executed on a computer, direct the computer to determine whether there are corresponding nodes in the partial topology and the cached topology.

24. The one or more computer readable media of claim 20, further comprising computer executable instructions that, when executed on a computer, direct the computer to transfer the at least one transform node from the cached topology to the partial topology.

25. The one or more computer readable media of claim 20, further comprising computer executable instructions that, when executed on a computer, direct the computer to clone a plurality of connected nodes from the cached topology into the partial topology.

26. The one or more computer readable media of claim 20, further comprising computer executable instructions that, when executed on a computer, direct the computer to maintain a data table that correlates one or more decoders in the cached topology with one or more source nodes in the cached topology.

27. The one or more computer readable media of claim 20, further comprising computer executable instructions that, when executed on a computer, direct the computer to connect one or more nodes in the partial topology.

28. The one or more computer readable media of claim 20, further comprising computer executable instructions that, when executed on a computer, direct the computer to generate a data path between the output of an upstream node an input of a downstream node.

29. A topology loader module comprising computer executable instructions that, when executed by a computer, provide:

means for receiving a partial media topology that includes a plurality of nodes including at least a first media source node and at least a first media sink node;

means for retrieving a cached media topology that includes a plurality of nodes including at least a second media source node, at least a second media sink node, and at least one transform node; and

means for copying one or more nodes from the cached media topology to the full resolved media topology.